Surveillance, Prevention and Response Plan for Zoonotic Influenza in Missouri

Bao-Ping Zhu, MD, MS, Howard Pue, DVM, MS (Missouri Department of Health and Senior Services); Rose Foster (Missouri Department of Agriculture)

BACKGROUND / ASSUMPTIONS

- **Missouri poultry industry provides important contribution to economy and citizens.**
  - In 2004, Missouri ranked 4th in turkey, 15th in egg and among top 10 states in meat chicken production in U.S.
  - Total value through goods and services is estimated at $970 million.
- **Migratory waterfowl are important to the economy and citizens of Missouri.**
  - Migratory bird hunters spend $34,857,535 annually, and generate $66,044,839 in annual economic activity.
  - Almost 90% of Missourians are interested in observing ducks and geese.
- **Avian influenza (AI) virus may infect people exposed to infected birds but may not evolve into a form capable of efficient human-to-human transmission.**
- **High pathogenic AI virus may not necessarily be lethal to U.S. commercial poultry.**
  - Lethality in Asian poultry may not be an accurate indication of lethality in U.S. poultry, which are under a higher level of care and may have better resistance.
- **Pandemic influenza will have substantial direct impact on human health. Poultry industry will be severely disrupted due to illness and employees afraid to report to work.**

GUIDING PRINCIPLES

- **Early detection of H5 or H7 AI in wild/domestic birds is critical for prevention & control.**
- **Disease outbreaks in poultry will result in different response than in humans.**
- **Rapid, coordinated response effort among federal, state, local & industry partners will be essential following confirmed cases of H5 or H7 influenza in poultry or animals.**
- **Assessment of health and educational needs of poultry workers (pre-, during, post-event) will be coordinated by MO Dept of Health & Senior Services and local public health agencies.**
- **Effective risk communication will help maintain consumer confidence in poultry products.**

GOALS

- **To ensure an integrated response to cases or outbreaks of high pathogenic AI (or low pathogenic AI of zoonotic concern) in poultry, waterfowl, swine or other animals.**
- **To protect human life, reduce social, economic & mental health impacts on citizens and communities.**
- **To ensure coordination among government agencies, including MO Dept of Agriculture, MO Dept of Health & Senior Services, MO Dept of Conservation, MO Dept of Natural Resources; other state partners; U.S. Dept of Agriculture (USDA), U.S. Dept of Interior (USDI); and with associated industries.**

OBJECTIVES

- **Objective 1: Assess historic levels of AI in poultry, wild birds, and other significant domestic/wild animals.**
- **Objective 2: Design and implement system to conduct surveillance for AI in wild and domestic birds. Formalize the system for processing dead/sick bird reports received by state agencies.**
- **Objective 3: Assess current lab capacity for animal AI testing at the Veterinary Medical Diagnostic Lab (VMDL) at University of Missouri - Columbia, MO State Public Health Lab, MO Dept of Agriculture, as well as USDA, USDI.**
- **Objective 4: Assess future needs of VMDL, MO State Public Health Lab, & MO Dept of Agriculture to initiate, continue, and/or enhance AI testing in animals.**
- **Objective 5: Assess barriers (current national/state/local laws, policies, etc.) to the collection of AI-associated data, its dissemination, and/or the implementation of effective response activities.**
- **Objective 6: Strengthen partnerships among MO Dept of Agriculture, MO Dept of Health & Senior Services, and other state/local agencies and poultry/livestock industries.**
- **Objective 7: Develop working relationships with adjoining states that have significant poultry and livestock industries.**
- **Objective 8: Assist animal agencies, public health departments & other entities to establish pre-event, event, and post-event plans that help protect health of public & mitigate risks to poultry/livestock industries in the event of AI outbreak.**
- **Objective 9: Monitor human influenza cases that could be due to AI strains of virus.**
- **Objective 10: Ensure that the public, media, decision makers, and pertinent agencies are informed regarding the results of surveillance and monitoring efforts, as well as appropriate preventive measures and effective interventions.**

STATUS / PROGRESS

- **Objectives 1-5 are essentially achieved.**
- **Objectives 6-10 are currently on-going.**
- **As of Jan. 5, 2007, 1,486 wild bird samples have been submitted to the Highly Pathogenic AI Early Detection Data System (HEDDS).**
  - **1 sample found to be positive with low pathogenic AI (H1N1).**
  - **No high pathogenic AI found.**
- **Participation in CDC/CSTE training on investigating high pathogenic AI outbreaks.**